Amendment to the Claims

1. (Previously amended) A *C. elegans* that has been genetically engineered to mis-express an SREBP pathway protein comprising an amino acid sequence selected from the group consisting of SEQ ID NO:2 (SREBP), SEQ ID NO:94 (SCAP), and SEQ ID NO:95 (S2P), or the progeny of said *C. elegans* that has inherited said mis-expression, wherein said mis-expression results in a loss-of-function intestinal defect phenotype.

2. (Previously amended) The *C. elegans* of Claim 1 that has been genetically engineered by a method selected from the group consisting of transposon insertion mutagenesis, double-stranded RNA interference, and chemical mutagenesis.

3-12. (Canceled)

13. (Previously amended) A method for identifying a gene that modifies the function of a gene encoding an SREBP pathway protein comprising obtaining a first *C. elegans* defined by Claim 1 and a second *C elegans* that has the same genetic engineering as the first *C. elegans* and that additionally has a mutation in a gene of interest, and detecting a difference between the intestinal defect phenotype of the first *C. elegans* and the intestinal defect phenotype of the second *C. elegans*, wherein a difference in the phenotypes identifies the gene of interest as capable of modifying the function of the gene encoding said SREBP pathway protein.

14. (Original) The method of Claim 13 wherein said gene of interest is implicated in cholesterol or fatty acid biosynthesis or metabolism.

15. (Canceled)

16. (Previously amended) The method of Claim 13 wherein said detecting step comprises staining the first and second *C. elegans in vivo* with a fluorescently-labelled fatty acid conjugate to measure lipid content within said first and second *C. elegans*.

17. (Previously amended) The method of Claim 16 wherein said fluorescently-labelled fatty acid conjugate comprises a fatty acid selected from the group consisting of 4,4-difluoro-5,7-dimethyl-4-bora-31,41-diaza-s-indacene-3-dodecanoic acid, and 4,4-difluoro-5-methyl-4-bora-3a,4a-diaza-s-indacene-3-dodecanoic acid.

18. (Previously amended) A method for studying lipid metabolism comprising administering one or more compounds to a *C. elegans* defined by Claim 1; and observing any changes in lipid content of said *C. elegans*.

19-21. (Canceled)

22. (Currently amended) An isolated nucleic acid molecule of less than 15 kb comprising a nucleic acid sequence that ~~(a) hybridizes to SEQ ID NO:1 under conditions comprising hybridizing in a buffer comprising 6X SSC / 25% formamide at 42°C and washing in a buffer comprising 0.5XSSC at 60°C, and (b)~~ encodes an ~~functionally active~~ SREBP polypeptide ~~having at least 80% sequence identity with amino acids 1-1113 of SEQ ID NO:2, said identity being determined by using the WU-BLAST-2.0a19 program and calculating the number of matching identical amino acids divided by the sequence length~~ comprising the amino acid sequence of SEQ ID NO:2.

23. (Amended) The isolated nucleic acid molecule of Claim 22 that comprises SEQ ID NO:1.

24. (Canceled)

25. (Original) A vector comprising the nucleic acid molecule of Claim 22.

26. (Original) A host cell comprising the vector of Claim 25.

27. (Original) The host cell of Claim 26 wherein said cell is a yeast cell.

28. (Original) A process for producing an SREBP pathway protein comprising culturing the host cell of Claim 26 under conditions suitable for expression of said SREBP pathway protein and recovering said protein.

29-33. (Canceled)

34. (Previously amended) The *C. elegans* of claim 1 wherein the SREBP pathway protein is SREBP (SEQ ID NO:2).

35. (Previously amended) The *C. elegans* of claim 1 wherein the SREBP pathway protein is SCAP (SEQ ID NO:94).

36. (Previously amended) The *C. elegans* of claim 1 wherein the SREBP pathway protein is S2P (SEQ ID NO:95).